

# Access to GOES-R Satellite Data and Products with McIDAS and Mobile Apps

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## Abstract

### Introduction

At the Space Science and Engineering Center (SSEC), the Man computer Interactive Data Access System (McIDAS) has been the cornerstone for satellite data visualization since the early 1970s. It continues to be used worldwide for research, educational purposes, operational product generation, and in forecasting at NOAA centers and international weather offices. There are two supported versions of the software: McIDAS-X (heritage) and McIDAS-V (Java-based).

### GOES-R

In preparation for GOES-R, SSEC is in the process of enhancing the core McIDAS-X and -V software packages to import the data and products from the ABI and GLM in netCDF format. For McIDAS-X to incorporate these new data, Abstract Data Distribution Environment (ADDE) servers are being developed. McIDAS-V is already netCDF-capable, so we have been testing with simulated data at this time.

### RealEarth and Mobile Apps

To take advantage of emerging web-mapping and mobile technologies, SSEC recently developed a server-based, extensible infrastructure called “RealEarth™” that can process satellite imagery and related data into formats optimized for display and manipulation in web browsers and native mobile device apps. The system is robust: over 240 imagery and data products are viewable in the RealEarth browser at <http://realearth.ssec.wisc.edu>. RealEarth is the backend for our mobile app, WxSat, which is available for iOS and Android phones and tablets. Currently, WxSat displays only near real-time visible, infrared, and water vapor global composite imagery. A GOES-R customized mobile app is in the early stages of development that will provide user-configurable, real-time access to the GOES-R data and products suite.

### Expected Access to GOES-R Data

- ADDE servers for ABI channel data, Level 2, 2+ products
- ADDE server for GLM data
- McIDAS-V access to GOES-R data and products
- Access to GOES-R data and products in RealEarth, mobile apps
- McIDAS-X and McIDAS-V readiness for Himawari-8 AHI data

## ADDE Servers for GOES-R

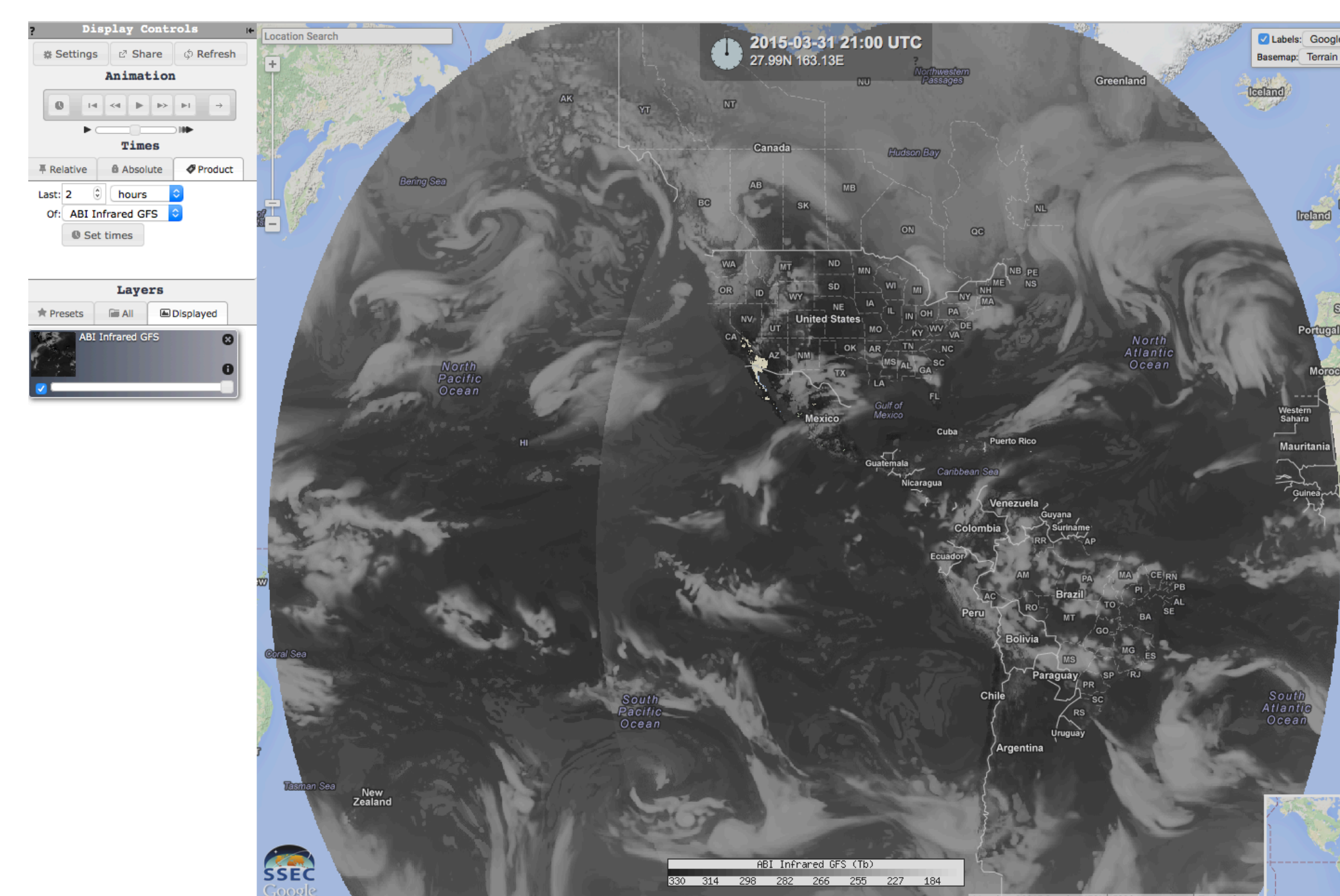
We are in the process of creating a specification for GOES-R imagery products in McIDAS AREA and MD files, similar to existing specifications for legacy GOES imagery products. These file format specifications will be used by NOAA in the development of data conversion software in the Product Distribution and Access (PDA) system.

The McIDAS-X software package will be updated to include GOES-R ADDE servers and associated calibration and navigation modules for the channel data, Level 2, and Level 2+ products. This update will be available pre-launch and will ensure seamless access to GOES-R data, when first available, by the McIDAS software.

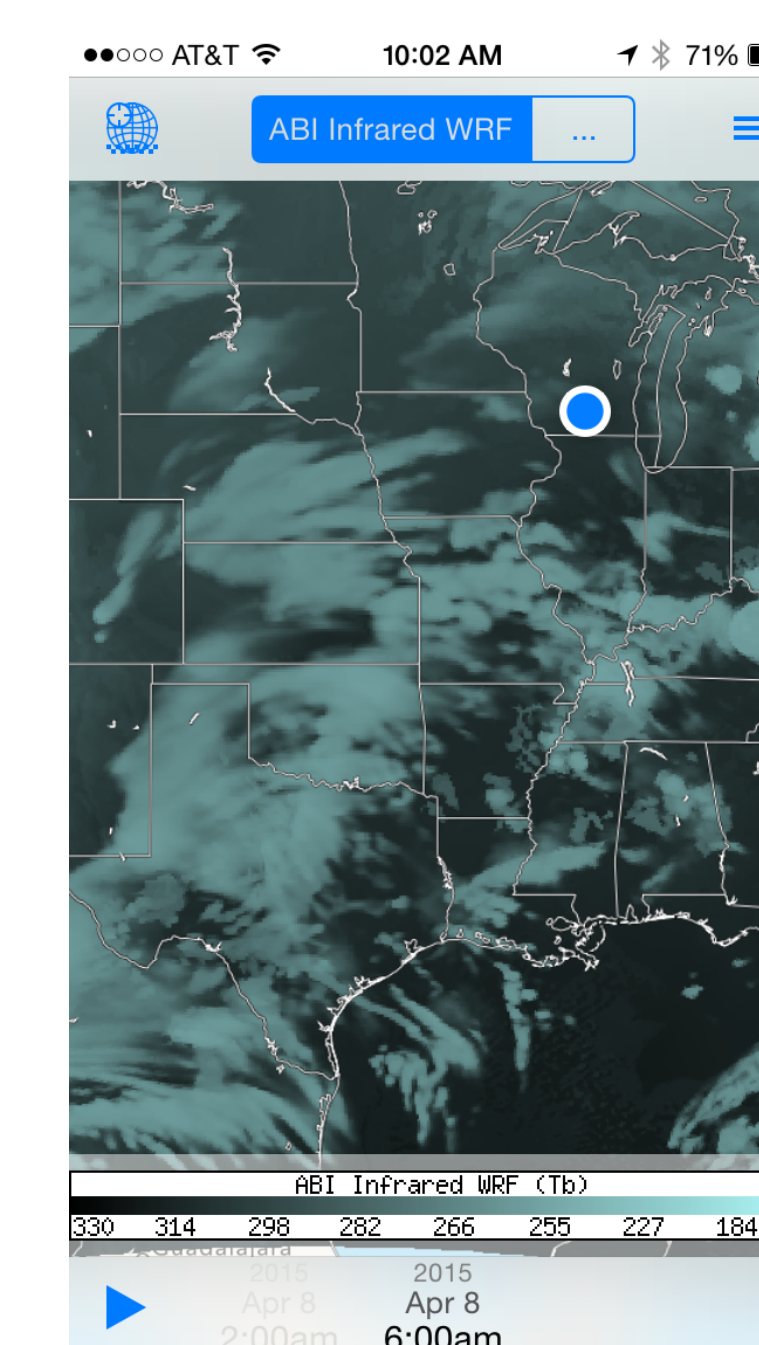
## RealEarth and Mobile Apps

RealEarth™ is SSEC’s Web Map Service (WMS) that can process satellite imagery and related data into formats optimized for display and manipulation in web browsers and native mobile device apps. Over 250 imagery and data products are viewable in the RealEarth browser at:

<http://realearth.ssec.wisc.edu>



Simulated ABI infrared window channel



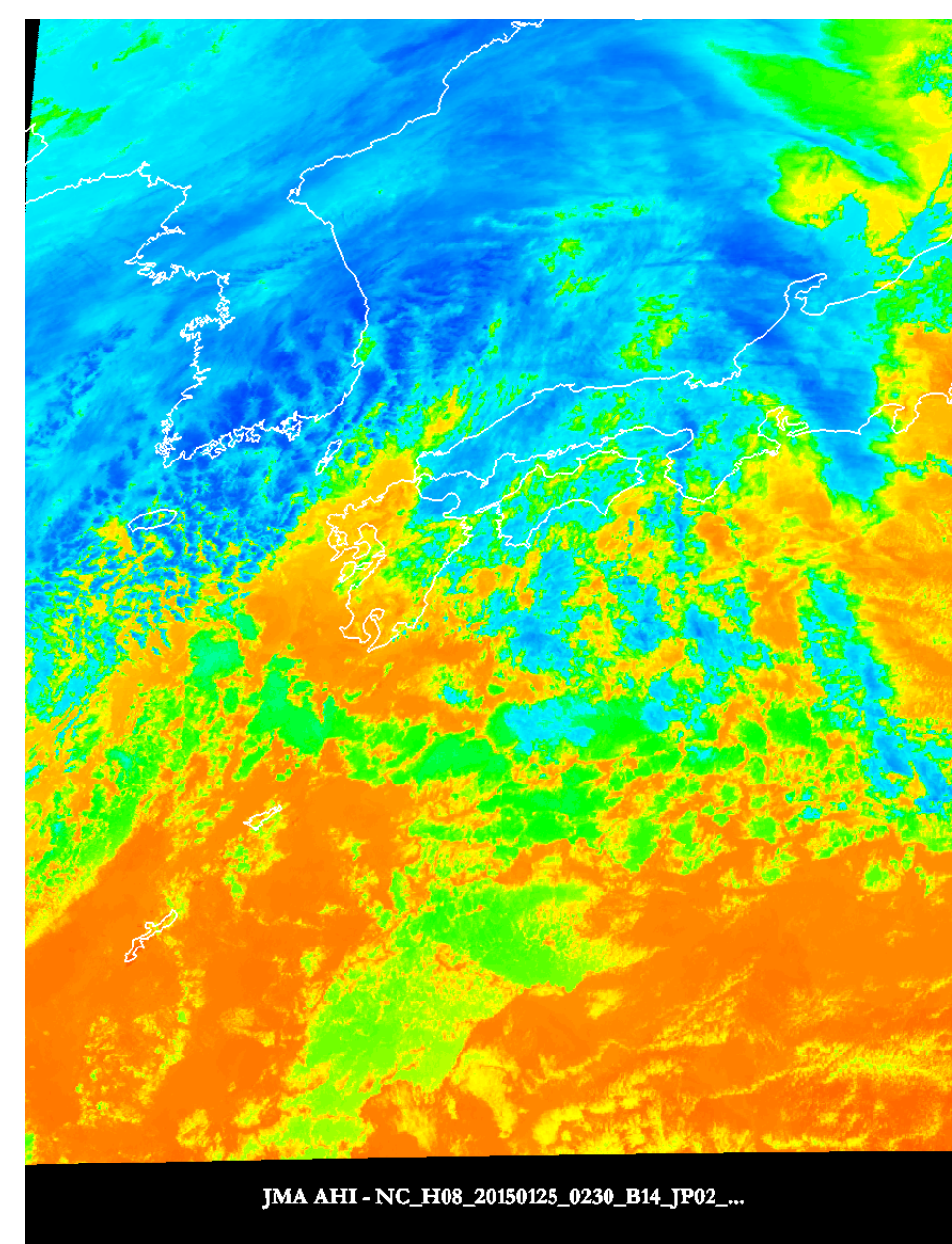
Future RealEarth App

## McIDAS-V Access to ABI

McIDAS-V will be capable of displaying the ABI channel data, Level 2, Level 2+ products.

**McIDAS-V is open source,  
freely available software**

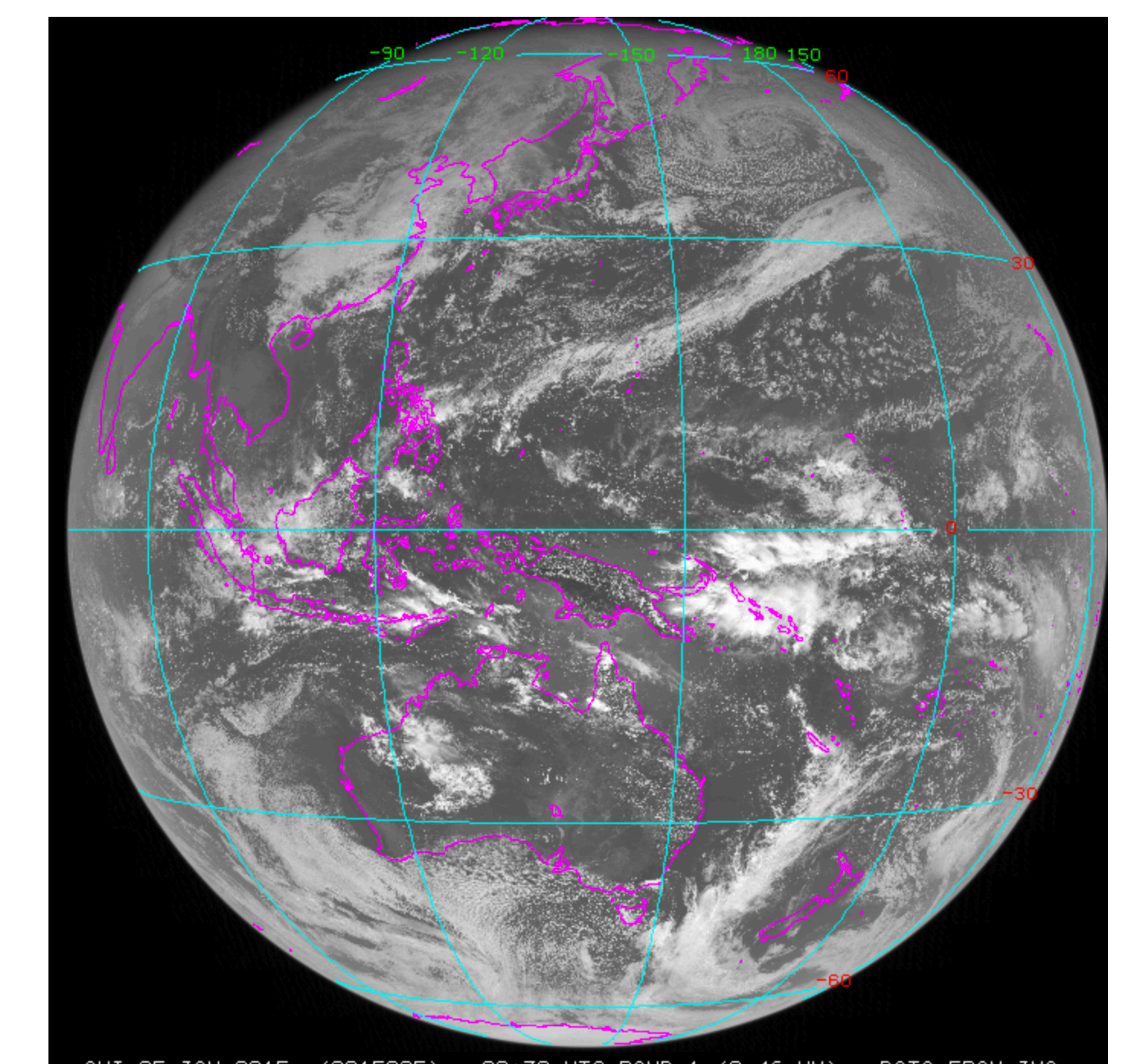
[http://www.ssec.wisc.edu/mcidas/  
software/v/](http://www.ssec.wisc.edu/mcidas/software/v/)




McIDAS-V Display of AHI IR

## Himawari AHI

In preparation for GOES-R, SSEC is in the process of developing a McIDAS-X ADDE server for the Himawari-8 AHI data.




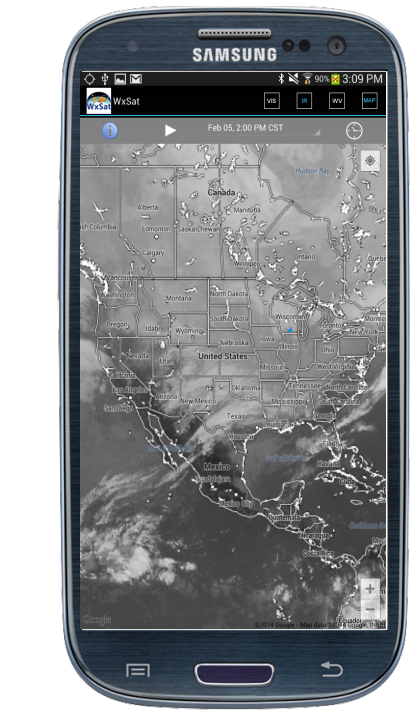
McIDAS-X display of Himawari AHI band 1 (0.46  $\mu$ ) image from  
25 January 2015 at 0230 UTC



### WxSat on iOS and Android

Global composites of visible, IR window, and water vapor channels

<https://itunes.apple.com/us/app/wxsat/id627994249?mt=8>  
<https://play.google.com/store/apps/details?id=edu.wisc.ssec.wxsat>

[http://www.ssec.wisc.edu/mcidas/news/goes-r\\_plans.html](http://www.ssec.wisc.edu/mcidas/news/goes-r_plans.html)  
[http://www.ssec.wisc.edu/mcidas/news/himawari\\_plans.html](http://www.ssec.wisc.edu/mcidas/news/himawari_plans.html)